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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/086,137	02/26/2002	Guangzhi Z. Zhang	NUFO011	4159

7590 08/06/2003
ALAN W. CANNON
834 SOUTH WOLFE ROAD
SUNNYVALE, CA 94086

EXAMINER

NGUYEN, TUAN N

ART UNIT PAPER NUMBER

2828

DATE MAILED: 08/06/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/086,137

Applicant(s)

ZHANG ET AL.

Examiner

Tuan N Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-38 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Paul J. P.
PAUL J. P.
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1-38 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite, vague, and confusing for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention, **for example**.

Claims 1, 12, 24, 31, and 37 recite a laser apparatus, comprising: a gain medium...; a *wavelength selection element positioned in said light beam; and a non-reciprocal pickoff position in said light beam*. It is vague and indefinite as to the *non-reciprocal pickoff* is in front or after the wavelength selection element. Claim 12 further recites “ (c) a reflector positioned in said optical path after said wavelength selecting element, said *reflector and a facet of said gain medium defining an external laser cavity*; it is not clear which facet of the gain medium defining the external laser cavity. It is vague and indefinite as to what a non-reciprocal pickoff is and its functional relationship in the laser apparatus. In addition, in claim 31 it is not clear as where the non-reciprocal pickoff in relation with the laser structure. There is insufficient means, structure and functional relationship to conform a laser apparatus. Claims 2-11, 13-23, 25-30, 32-36, and 38 are rejected base on the same reason.

Claim Rejections - 35 USC § 102

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3. The following is a quotation of 35 U.S.C. 102(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

4. Claims 1-6, 24-27, 31-32, and 37-38 are rejected under 35 U.S.C. 102(a) as being unpatentable over Zorabedian et al. (US 6526071)(60/152,042).

With respect to claims 1, 24, 31, and 37 Zorabedian '071 shows a laser apparatus comprising a gain medium, a wavelength selecting element, and non-reciprocal pickoff position positioned in said light beam and pick-off a portion of light returning from tuning means, and light feedback to the gain medium (Col 7: 0-12; Col: 8-9; Col 12: 30-67), (F 4: 202, 414, 226, 264), (F 2a: 222, 220, 230, 228, 210, 201). Since claims 24, and 31 recites the same or identical elements/limitations it is inherent to use patents ('042) to recite the method of laser operation, product by process.

With respect to claims 2-6, 25-27, 32, 38 Zorabedian '071 shows in figures 2a, 2b, 3-4 the non-reciprocal pickoff comprises a linear polarizer and the non-reciprocal polarization rotator, where they are angularly substantially equal and balanced with each other.

With respect to claims 8-11 Zorabedian '071 shows in (figure 4: 414, 310; Fig 2-3) the wavelength selecting having grating, lying at an angle and tunable.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or non-obviousness.
6. Claims 7, 12-22, 23, 28, 30, 33-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zorabedian et al. (US 6526071)(60/152,042) in view of Ershov (US 5917849).

With respect to claims 7, 12, 28 Zorabedian '071 discloses the above and light feedback to the gain medium (Col 7: 0-12), except a reflector positioned after the wavelength selection element that reflect back to the gain medium. Ershov '849 discloses a laser apparatus having wavelength selection element with mirror that reflect beam to the laser as an external laser cavity. For the benefit of having a reflector resonate the output beam back and act as external resonator with the gain medium, it would have been obvious to one of ordinary skill in the art to provide Zorabedian '071 the element as taught or suggested by Ershov '849.

With respect to claims 13-20, 23, 30 Zorabedian '071 shows in (figures 2a, 2b, 3-4: 414, 310) the non-reciprocal pickoff comprise a linear polarizer and the non-reciprocal polarization rotator, where they are angularly substantially equal and balanced with each other. He also shows the wavelength selecting having grating, lying at an angle and tunable.

With respect to claims 21, 35, 36, Ershov '849 shows the use of beam splitter (Fig 2,3: 22). For the benefit of having a beam splitter, it would have been obvious to one of ordinary skill in the art to provide Zorabedian '071 the element as taught or suggested by Ershov '849, for the benefit of (for example) feedback for further amplification.

With respect to claims 22, 33, 34, Zorabedian '071 shows in (Col 6: 27-30) and (figures 2a: 262, 264, 222, 200-290) the non-reciprocal rotator comprises a Faraday rotator.

Citation of Pertinent References

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. It is cited primarily to show the product of the instant invention.

Ershov (US005852627A) / (US006243170B1) , Wakabayashi et al. (US006317203B1), Maeda (US005862162A), Burghardt (US005226050A), Kitamura (US005491714A), Shichijyo et al. (US005809048A), Smith et al. (US006359693B2), Okazaki et al. (US005432807A), Yamamoto (US 3938058), and Kokkelink et al. (US006430323B1) show the tunable laser apparatus and lens.

Communication Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan N Nguyen whose telephone number is (703) 605-0756. The examiner can normally be reached on M-F: 7:30 - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Ip can be reached on (703) 308-3098. The fax phone numbers for the

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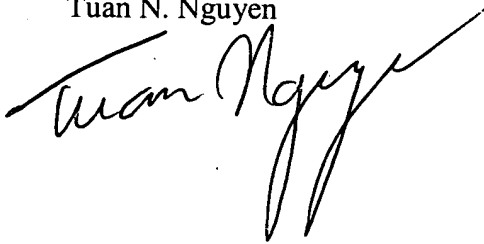
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organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-3329.

Tuan N. Nguyen

A handwritten signature in black ink, appearing to read 'Tuan Nguyen', with a long, sweeping underline.


PAUL IP
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